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**From:** d'Almeida, Carolyn K. [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9EC4401AFA1846DD93D52A0DDA973581-CDALMEID]  
**Sent:** 3/22/2016 4:00:30 PM  
**To:** Davis, Eva [Davis.Eva@epa.gov]  
**Subject:** FW: 2016-3-22 - wafb - FYI - more steam may not benefit extraction - st012 - opinion bo stewart praxis

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**From:** Wayne Miller [mailto:Miller.Wayne@azdeq.gov]  
**Sent:** Tuesday, March 22, 2016 8:59 AM  
**To:** d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>  
**Subject:** 2016-3-22 - wafb - FYI - more steam may not benefit extraction - st012 - opinion bo stewart praxis

FYI – see Bo opinion below

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**From:** Steve Willis [mailto:steve@uxopro.com]  
**Sent:** Monday, March 21, 2016 2:32 PM  
**To:** Wayne Miller <Miller.Wayne@azdeq.gov>  
**Subject:** 2016-3-21 - wafb - more steam may not benefit extraction - st012 - bo stewart praxis

From Bo re extraction

*Steven A. Willis, R.G.  
UXO Pro, Inc.  
Arizona Registered Geologist #30448  
(480) 316-3373  
[steve@uxopro.com](mailto:steve@uxopro.com)*

----- Original Message -----

**From:** Bo Stewart <Bo@praxis-enviro.com>  
**To:** Steve Willis <[steve@uxopro.com](mailto:steve@uxopro.com)>; Eleanor Jennings <[ejennings@teci.pro](mailto:ejennings@teci.pro)>  
**Sent:** Monday, March 21, 2016 2:29:08 PM  
**Subject:** Re: FWD: 2016-3-21 - wafb - FYI - st012 - terra therm extracting - maybe or maybe not adding steam - per cda epa - gh terra therm

This was expected, as we discussed. I don't think additional steam will yield much and would disrupt the NAPL extraction. NAPL is likely coming from the inside and not just the perimeter with increased gradients toward extraction wells. Injected steam will not "push" NAPL any longer but increased hydraulic gradients can persuade it to move to extraction wells. They may not have reached a peak NAPL recovery yet for post-steam.

On 3/21/2016 2:12 PM, Steve Willis wrote:

FYI,

*Steven A. Willis, R.G.  
UXO Pro, Inc.  
Arizona Registered Geologist #30448  
(480) 316-3373  
[steve@uxopro.com](mailto:steve@uxopro.com)*

----- Original Message -----

**From:** Wayne Miller <Miller.Wayne@azdeq.gov>

**To:** steve <steve@uxopro.com>

**Sent:** Monday, March 21, 2016 2:01:41 PM

**Subject:** 2016-3-21 - wafb - FYI - st012 - terra therm extracting - maybe or maybe not adding steam - per cda epa - gh terra therm

FYI -

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**From:** Gorm Heron [mailto:gheron@terratherm.com]

**Sent:** Monday, March 21, 2016 1:40 PM

**To:** Davis, Eva <Davis.Eva@epa.gov>; d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Wayne Miller <Miller.Wayne@azdeq.gov>

**Subject:** 2016-3-21 - wafb - st012 - terra therm extracting - maybe or maybe not adding steam - per cda epa - gh terra therm

We are extracting really well right now with water table lowered and stable. NAPL recovery around 2000 lbs/day. We are observing mass removal rate versus temperatures on the extraction wells and will evaluate whether another steam puff = pressurization cycle would make sense. For now we do not want to disturb the pattern where we are seeing good NAPL removal.

Gorm

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**From:** Davis, Eva [mailto:Davis.Eva@epa.gov]

**Sent:** Monday, March 21, 2016 9:30 AM

**To:** d'Almeida, Carolyn K.; Wayne Miller

**Cc:** Gorm Heron

**Subject:** RE: weekly report

We can always ask, not at all sure we will get it -- Gorm, what do you think?

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**From:** d'Almeida, Carolyn K.

**Sent:** Monday, March 21, 2016 11:23 AM

**To:** Davis, Eva <Davis.Eva@epa.gov>; Wayne Miller <Miller.Wayne@azdeq.gov>

**Subject:** FW: weekly report

Since this last pressurization evidently moved a lot of NAPL into CZ wells should we ask for one more round?

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**From:** d'Almeida, Carolyn K.  
**Sent:** Friday, March 18, 2016 3:53 PM  
**To:** Davis, Eva <[Davis.Eva@epa.gov](mailto:Davis.Eva@epa.gov)>  
**Cc:** Wayne Miller <[Miller.Wayne@azdeq.gov](mailto:Miller.Wayne@azdeq.gov)>  
**Subject:** RE: weekly report

Did you see the latest jar test results? LNAPL in all of the UWBZ interior wells and some of the cobble zone wells

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**From:** Davis, Eva  
**Sent:** Friday, March 18, 2016 8:42 AM  
**To:** d'Almeida, Carolyn K. <[dAlmeida.Carolyn@epa.gov](mailto:dAlmeida.Carolyn@epa.gov)>; Dan Pope <[DPope@css-dynamac.com](mailto:DPope@css-dynamac.com)>  
**Subject:** weekly report

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Lloyd "Bo" Stewart, PhD, PE  
Praxis Environmental Tech., Inc.

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